217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT

PERMITTEE

Toyal America, Inc.
Attn: Raymond Malmgren
17401 South Broadway
Lockport, Illinois 60441

Application No.: 03070038 I.D. No.: 197810AAQ
Applicant's Designation: Date Received: July 18, 2003
Subject: Aluminum Paste, Flake, and Powder Manufacturing
Date Issued: November 25, 2003 Expiration Date: November 25, 2008
Location: 17401 South Broadway, Lockport

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of

Uncontrolled Process Emission Units:

A-Unit Aluminum Paste Process:

Screener O/S Trough and Product with 8 Openings
Filter Press Clean Out
Transfer from Screeners to Drum
Transfer from Mixer to Drum

B-Unit Aluminum Paste Process:

Screener O/S Trough and Product with 20 Openings
Filter Press Clean Out
3 Transfer Points of Ferro Filter Backwash and Oversized to Vac Pan Open
Transfer From Mixer to Drum

C-Unit Aluminum Paste Process:

Screener O/S Trough and Product with 9 Openings
Filter Press Clean Out
2 Transfer Points of Ferro Filter Backwash and Oversized to Vac Pan Open
Transfer From Mixer to Drum

D and E-Units Aluminum Paste Process:

Screener O/S Trough and Product with 15 Openings
3 Filter Press Clean Out
4 Transfer Points of Ferro Filter Backwash and Oversized to Vac Pan Open
Transfer From Mixer to Drum

F-Unit Aluminum Paste Process:

Screeners O/S Trough and Product with 20 Openings
3 Filter Press Clean Out
2 Transfer Points of Ferro Filter Backwash and Oversized to Vac Pan Open
Transfer From Mixer to Drum

Solvent Distillation Process:

Solvent Distillation Sludge Drum

FX Paste Process:

Transfer From Pan Filer to Drum
Screeners O/S Trough and Product with Openings
Vac Pan Open

Sigma Mixing Process:

Transfer From Mixer to Drum
Jaygo Mixer

Research and Development Unit:

Ball Mill
Discharger Tank
Screen
Vacuum Pan Filter
Mixer

Analytical Laboratory:

Laboratory Analysis and Test Procedures

Emission Units controlled by Regenerative Catalytic Oxidizer:

A-Unit Aluminum Paste Process:

Charge Tank
2 A-Mills
4 Screeners
Discharge Tank
Filter Tank
Filter Press Air Drying-A with 2 Process Oil Tanks

B-Unit Aluminum Paste Process:

2 Charge Tanks
4 B-Mills
14 Screeners
Discharge Tank
3 Pan Filters

Screened Tank
Filter Tank
Filter Press Air Drying with 2 Process Oil Tank

C-Unit Aluminum Paste Process:

Charge Tank
2 Ball Mills
Discharge Tank
6 Screeners
2 Pan Filters
Screened Tank
Filter Tank
Filter Press Air Drying with 2 Process Oil Tank

D and E-Units Aluminum Paste Process:

2 Charge Tanks
4 Ball Mills/Overflow Tank
2 Discharge Tanks
10 Screeners
2 Screened Tanks
6 Pan Filters
Predecanter Tank
4 Filter Tanks
2 Centrifuges
2 C and CF Tanks
3 Filter Press Air Drying with 2 Process Oil Tank

F-Unit Aluminum Paste Process:

Charge Tank
Ball Mill/Overflow Tank
Discharge Tank
Screened Tank
3 Pan Filters
Predecanter Tank
2 Centrifuges
7 Filter Tanks
8 Screeners
3 Filter Press Clean Out with 2 Process Oil Tank

Solvent Distillation Process:

Solvent Distillation Wash Tank
Clean Oil Storage Tank
Surge Tank

FX Paste Process:

Mix and Discharge Tank Vent Condensers
Presscake Handling Station

3 Pan Filters
2 Screeners

Sigma Mixing Process:

Vacuum/Condenser

Aluminum Flake Drying:

Condenser Sump

Miscellaneous Units:

4 Clean Oil Storage Tanks (12,000-Gallon, 12,000-Gallon, 4,100-Gallon, and 8,000-Gallon)
Hazardous Waste Storage Tank (5,600-Gallon)
2 Mineral Spirits Storage Tanks (3,000-Gallon)
Gasoline Storage Tank (1,500 Gallon)
Natural Gas Fired Boiler (5.4 mmBtu/Hr)
2 Aluminum Melting Furnaces (1,500 Lb/Hr Melt, Each)
2 Atomizers with Cyclones and Baghouses
Aluminum Powder Classification Consisting of 2 Classifiers, 3 Bins, Blender and A Screen
Fine Powder Classifier with Cyclone and Baghouse
Solvent Parts Washer
33 Small Natural Gas Fired Heaters (4.7 mmBtu/Hr, Total)

pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1a. This federally enforceable state operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (Volatile Organic Material (VOM) to less than 25 Tons/yr). As a result the source is excluded from the requirement to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.

b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.

c. This permit supersedes all operating permits issued for this location.

2. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act shall not equal or exceed 10 tons per year of any single HAP or 25 tons per year of any combination of such HAPs, or such lesser quantity as USEPA may establish in rule which would require the Permittee to obtain a CAAPP permit from the Illinois EPA. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a CAAPP permit from the Illinois EPA.

3a. Emissions and operation of the Aluminum Paste and Flake Production shall not exceed the following limits:

Process	Maximum Production Rate (Ton/Hr)	Pollutant	Emissions (Lb/Hr)	Emissions (Ton/Yr)
Aluminum Paste and Flake Production (Process Units*)	1.15	VOM	4.08	17.91
		PM	2.73	11.96
Aluminum Paste and Flake Production (Uncontrolled Processes**)	1.15	VOM	1.03	4.50

* Subject to 35 Ill. Adm. Code 218.986

** Subject to 35 Ill. Adm. Code 218.980(d)

These limits are based on the VOM emission rate determined in most recent stack testing, 8,760 hours of operation, 81% overall control efficiency, and allowable particulate matter emission rates of 35 Ill. Adm. Code 212.321. Compliance with annual limits shall be determined from a running total of 12 months of data.

b. The Regenerative Catalytic Oxidizer shall be in operation at all times when the aluminum paste and flake manufacturing process is in operation, except for instances of malfunction and breakdown as provided in this permit.

4. Emissions and operation from natural gas combustion shall not exceed the following limits:

Process	Natural Gas Usage (mmscf/Mo)	Natural Gas Usage (mmscf/Yr)	Pollutant	Emission Factor (Lb/mmscf)	Emissions (Lb/Mo)	Emissions (Ton/Yr)
Natural Gas Combustion	60	350	NO_x	100	6,000	17.50
			CO	84	5,040	14.70
			PM	7.6	456	1.33
			VOM	5.5	330	0.96
			SO_2	0.6	36	0.11

These limits are based standard AP-42 emission factors, and maximum firing rates using natural gas as the only fuel fired. Compliance with annual limits shall be determined from a running total of 12 months of data.

5a. Emissions and operation of the Degreaser shall not exceed the following limits:

Equipment	VOM Usage (Lb/Mo)	VOM Usage (Lb/Yr)	VOM Emissions (Lb/Mo)	VOM Emissions (Ton/Yr)
Solvent Parts Washer	120	960	120	0.48

These limits are based on maximum emissions resulting from maximum material usage. Compliance with annual limits shall be determined from a running total of 12 months of data.

b. Compliance with the emission limit specified in Special Condition No. 5(a) shall be determined based on the following method:

VOM Usage and Emissions = (Initial Material Usage x Material VOM Content) – (Spent Material Sent x Spent Material VOM Content)

6. Emissions and operation of the atomizers shall not exceed the following limits:

Process	Maximum Production Rate (Ton/Hr)	Pollutant	Emissions (Lb/Hr)	Emissions (Ton/Yr)
Aluminum Atomization with Dust Collection (Total)	1.5	PM	3.15	13.84
Aluminum Powder Classification with Dust Collection (Total)	1.5	PM	3.15	13.84

These limits are based on allowable particulate matter emission rates of 35 Ill. Adm. Code 212.321 and maximum production rates. Compliance with annual limits shall be determined from a running total of 12 months of data.

7. This permit is issued based on negligible emissions of volatile organic material (VOM) from 4 Clean Oil storage tanks, Hazardous waste storage tank, and 2 FX Mineral Spirits storage tanks. For this purpose emissions from each emission source, shall not exceed nominal emission rates of 0.01 lb/hour and 0.044 ton/yr.

8. This permit is issued based on negligible emissions of volatile organic material (VOM) from the gasoline storage tank. For this purpose emissions from this emission source, shall not exceed nominal emission rates of 0.05 lb/hour and 0.22 ton/yr.

9. This permit is issued based on negligible emissions of particulate matter (PM) due to the melting of aluminum ingots from 2 aluminum melting furnaces. For this purpose emissions from each emission

source, shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 tons/year.

10. Emissions of volatile organic material (VOM) shall be reduced by 81% from the Emission Units Controlled by Regenerative Catalytic Oxidizer, pursuant to 35 Ill. Adm. Code 218.986(a).

11a. Pursuant to 35 Ill. Adm. Code 218.105 (d)(2), the regenerative catalytic oxidizer shall use Illinois EPA and USEPA approved continuous monitoring equipment, which is installed, calibrated, maintained, and operated according to vendor specifications at all times that the regenerative catalytic oxidizer is in use.

b. Pursuant to 35 Ill. Adm. Code 218.105 (d)(2)(ii), shall be equipped with a continuous monitoring device designed to monitor the temperature rise across each catalyst bed or VOM concentration of the exhaust.

12. Pursuant to 35 Ill. Adm. Code 218.182:

a. No person shall operate a cold cleaning degreaser unless:

i. Waste solvent is stored in covered containers only and not disposed of in such a manner that more than 20% of the waste solvent (by weight) is allowed to evaporate into the atmosphere;

ii. The cover of the degreaser is closed when parts are not being handled; and

iii. Parts are drained until dripping ceases.

b. No person shall operate a cold cleaning degreaser unless:

i. The degreaser is equipped with a cover, which is closed whenever parts are not being handled in the cleaner. The cover shall be designed to be easily operated with one hand or with the mechanical assistance of springs, counter-weights or a powered system if:

A. The solvent vapor pressure is greater than 2 kPa (15 mmHg or 0.3 psi) measured at 38°C (100°F);

B. The solvent is agitated; or

C. The solvent is heated above ambient room temperature.

ii. The degreaser is equipped with a device for draining cleaned parts. The drainage device shall be constructed so that parts are enclosed under the cover while draining unless:

A. The solvent vapor pressure is less than 4.3 kPa (32 mmHg or 0.6 psi) measured at 38°C (100°F); or

B. An internal drainage device cannot be fitted into the cleaning system, in which case the drainage device may be external.

iii. The degreaser is equipped with one of the following control devices if the vapor pressure of the solvent is greater than 4.3 kPa (32 mmHg or 0.6 psi) measured at 38°C (100°F) or if the solvent is heated above 50°C (120°F) or its boiling point:

A. A freeboard height of 7/10 of the inside width of the tank or 91 cm (36 in), whichever is less; or

B. Any other equipment or system of equivalent emission control as approved by the Agency and further processed consistent with Section 218.108 of this Part. Such a system may include a water cover, refrigerated chiller or carbon adsorber.

iv. A permanent conspicuous label summarizing the operating procedure is affixed to the degreaser; and

v. If a solvent spray is used, the degreaser is equipped with a solid fluid stream spray, rather than a fine, atomized or shower spray.

c. No person shall operate a cold cleaning degreaser unless the following material are utilized:

i. Cause or allow the sale of solvent with a vapor pressure which exceeds 1.0 mmHg (0.019 psi) measured at 20°C (68°F) in units greater than five gallons, for use in cold cleaning degreasing operations located in the area covered by Section 218.103 of this Part.

ii. Operate a cold cleaning degreaser with a solvent vapor pressure, which exceeds 1.0 mmHg (0.019 psi) measured at 20°C (68°F).

13. In the event of a malfunction or breakdown of the Regenerative Catalytic Oxidizer control system for the Aluminum Paste and Flake manufacturing Process, the Permittee is authorized to continue operation of the Aluminum Paste and Flake manufacturing Process in violation of the applicable requirement of 35 Ill. Adm. Code 218.301 and 218.986(a), as necessary to prevent risk of injury to personnel or severe damage to equipment. This authorization is subject to the following requirements:

a. The Permittee shall repair the damaged feature(s) of the Regenerative Catalytic Oxidizer or remove the Aluminum Paste and Flake manufacturing Process from production as soon as practicable. This shall be accomplished within 2 hours of the malfunction, unless the malfunction(s) cannot be repaired with 2 hours or the Aluminum Paste and Flake manufacturing Process cannot be removed from production within 2 hours.

b. The Permittee shall fulfill the applicable record keeping and reporting requirements of special conditions 22 and 24.

c. The control system shall be repaired and proper working condition prior to the aluminum paste and flake manufacturing process resuming operations.

d. Total combined emissions from the affected Aluminum Paste and Flake manufacturing Process during periods of malfunction and breakdown of the Regenerative Catalytic Oxidizer plus emissions and during proper operation of the Regenerative Catalytic Oxidizer shall not exceed 18.50 tons/year of VOM.

14. The Permittee shall, in accordance with the manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance on the pollution control equipment covered under this permit such that the pollution control equipment be kept in proper working condition and not cause a violation of the Environmental Protection Act or regulations promulgated therein.

15. The Permittee shall maintain records of the vendor recommendations at the facility and be available for inspection and copying by the Illinois EPA.

16. No person shall cause or allow any visible emissions of fugitive particulate matter from any process, including any material handling or storage activity beyond the property line of the emission source, pursuant to 35 Ill. Adm. Code 212.301.

17. In the event that the operation of this emission unit results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the odor nuisance.

18a. Within 60 days of a written request by the Illinois EPA, the VOM emissions of the regenerative catalytic oxidizer shall be measured during conditions which are representative of maximum emissions.

b. The following methods and procedures shall be used for testing of emissions, unless another method is approved by the Illinois EPA: Refer to 40 CFR 60, Appendix A, and 40 CFR 61, Appendix B, for USEPA test methods.

Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Flue Gas Weight	USEPA Method 3
Moisture	USEPA Method 4
Volatile Organic Material	USEPA Method 25, 25A if outlet VOM cont. < 50 ppmv as C Non CH_4

c. The Illinois EPA shall be notified prior to these tests to enable the Illinois EPA to observe these tests. Notification of the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the test. The Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing.

19. At least 30 days prior to the actual date of testing, a written test plan shall be submitted to the Compliance Section of the Division of Air Pollution Control for review. This plan shall describe the specific procedures for testing, including as a minimum:

    a. The person(s) who will be performing sampling and analysis and their experience with similar tests.

    b. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the emission unit and any control equipment will be determined.

    c. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations.

    d. The test method(s) which will be used, with the specific analysis method, if the method can be used with different analysis methods.

    e. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.

    f. Any proposed use of an alternative test method, with detailed justification.

    g. The format and content of the Source Test Report.

20. The tests shall be designed to measure both the destruction efficiency across the afterburner and capture efficiency to determine the overall control efficiency for the regenerative Catalytic oxidizer and capture efficiency to determine the overall control efficiency.

21a. Copies of the Final Report(s) for these tests shall be submitted to the Illinois EPA within 14 days after the test results are compiled and finalized.

b. The Final Report shall include as a minimum:

i. A summary of results.

ii. General information.

iii. Description of test method(s), including description of sampling points, sampling train, analysis equipment, and test schedule.

iv. Detailed description of test conditions, including:

A. Process information, i.e., mode(s) of operation, process rate, e.g. fuel or raw material consumption;

B. Control equipment information, i.e., equipment condition and operating parameters during testing; and

C. A discussion of any preparatory actions taken, i.e., inspections, maintenance and repair.

v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.

vi. An explanation of any discrepancies among individual tests or anomalous data.

22. The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of the Aluminum Paste and Flake manufacturing Process with the permit requirements. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

a. The Permittee shall provide the following notification and reports to the Illinois EPA, Compliance Section and Regional Field Office, pursuant to 35 IAC 201.263, concerning continued operation of Aluminum Paste and Flake manufacturing Process subject to Condition 3 during malfunction or breakdown of the Regenerative Catalytic Oxidizer control system.

i. The Permittee shall notify the Illinois EPA's regional office by telephone as soon as possible during normal working hours, but no later than three (3) days, upon the occurrence of noncompliance due to malfunction or breakdown.

ii. Upon achievement of compliance, the Permittee shall give a written follow-up notice to the Illinois EPA, Compliance

Section and Regional Field Office, providing a detailed explanation of the event, an explanation why continued operation of the Aluminum Paste and Flake manufacturing Process was necessary, the length of time during which operation continued under such conditions, the measures taken by the Permittee to minimize and correct deficiencies with chronology, and when the repairs were completed or when the Aluminum Paste and Flake manufacturing Process was taken out of service.

iii. If compliance is not achieved within 5 working days of the occurrence, the Permittee shall submit interim status reports to the Illinois EPA, Compliance Section and Regional Field Office, within 5 days of the occurrence and every 14 days thereafter, until compliance is achieved. These interim reports shall provide a brief explanation of the nature of the malfunction or breakdown, corrective actions accomplished to date, actions anticipated to occur with schedule, and the expected date on which repairs will be complete or the Aluminum Paste and Flake manufacturing Process will be taken out of service.

23. The Permittee shall maintain the following records:

a. Aluminum Paste and Flake Production rate (ton/mo and ton/yr);

b. Emissions of PM and VOM resulting from the Aluminum Paste and Flake Production (ton/mo and ton/yr);

c. Natural gas usage of the source (mmscf/mo and mmscf/yr);

d. Natural gas combustion emissions (ton/mo and ton/yr);

e. VOM usage and emissions from the degreaser based on certified records of solvent shipped off (ton/mo and ton/yr);

f. Aluminum Atomization and Aluminum Powder Classification production rates (ton/mo and ton/yr);

g. PM emissions from the Aluminum Atomization and Aluminum Powder Classification processes (ton/mo and ton/yr);

h. Total VOM emissions of the source (ton/mo and ton/yr);

i. The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of the Aluminum Paste and Flake manufacturing Process subject to 35 Ill. Adm. Code 218.986(a) and 218.301 during malfunctions and breakdown of the control features of the Regenerative Catalytic Oxidizer, which as a minimum, shall include:

i. Date and duration of malfunction or breakdown;

ii. A detailed explanation of the malfunction or breakdown;

iii. An explanation why the damaged feature(s) could not be immediately repaired or the Aluminum Paste and Flake manufacturing Process removed from service without risk of injury to personnel or severe damage to equipment;

iv. The measures used to reduce the quantity of emissions and the duration of the event;

v. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity; and

vi. The amount of release above typical emissions during malfunction/breakdown.

24. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.

25. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

26. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

If you have any questions on this, please call Eric Jones at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

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cc: Illinois EPA, FOS Region 3
Illinois EPA, Compliance Section
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from Aluminum Paste, Flake, and Powder Manufacturing facility operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario, which results in maximum emissions from such a plant. The limitation of hours or operation, processing limitations, and control requirements. The resulting maximum emissions are well below the levels, e.g., 25 Tons/yr of Volatile Organic Materials (VOM) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled and control measures are more effective than required in this permit.

	E M I S S I O N S (Tons/Year)				
Emission Unit(s)	CO	NO_x	PM	SO_2	VOM
Aluminum Paste and Flake Production (Process Units and Malfunction and Breakdown)			11.96		18.50
Aluminum Paste and Flake Production ("Fugitive")					4.50
Natural Gas Combustion	14.70	17.50	1.33	0.11	0.90
Solvent Parts Washer					0.48
Aluminum Atomization with Dust Collection			13.84		
Aluminum Powder Classification with Dust Collection			13.84		
4 Clean Oil Storage Tanks					0.176
Hazardous Waste Storage Tank					0.044
2 FX Mineral Spirits Storage Tanks					0.088
Gasoline Storage Tank					0.22
2 Aluminum Melting Furnaces			0.88		

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